

Listing of claims:

The following listing of claims replaces all previous claim listings in the application:

1. (Currently Amended). A data protection system, comprising:

a filesystem configured to contain shares of data and to be connected-in communication with at least one local repository that is in communication with at least one remote repository, wherein two or more repositories are configured to store a replica of a file, wherein each repository includes multiple repository nodes, at least one of which is configured to store the replica of the file, wherein a storage location and a number of replicas in each repository can be configured to change over time;

wherein based on a criticality of the file, the number of stored replicas of the file can be increased or decreased in at least one repository;

wherein a share of data is created on the filesystem as a directory or folder of storage capacity;

the filesystem includes:

a filter driver operative to intercept input or output activity initiated by client file requests, including modification of any existing stored files and/or creation of new files as they occur, and further configured to capture a snapshot of a set of the shares of data at a particular point in time and to maintain a list of modified and/or created files since a last snapshot occurred;

a file system in communication with the filter driver and operative to store client files;

the filesystem is configured to store a unique protection policy for each share of data on the filesystem, the protection policy defines:

repositories used to protect each share of data;

frequency of data protection;

number of replicas of each file that are maintained in each repository; and, maintenance of modifications to each share of data;

based on the definitions in the protection policy, the filter driver is configured to capture the snapshot at a specified time interval based on a backup frequency defined in a

~~protection policy stored in the files server, wherein the protection policy is configured to be uniquely defined for each share of data on the files server.~~

2. (Cancelled).

3. (Previously Presented). The system of claim 1, wherein the files server further comprises:

a location cache configured to determine based on the protection policy which repository will be used to protect each share of data; and

a location manager coupled to the location cache and operative to update the location cache when the files server protects a new share of data in a specific repository node.

4. (Currently Amended). The system of claim 3, ~~further comprising wherein a the~~ local repository in communication with the files server ~~and is~~ adapted for receiving files from the files server;

the local repository is further adapted to receive replicated files from the files server; and

the local repository includes a protection policy component operative to determine whether new versions of existing files should be compressed and whether older versions of existing files should be maintained.

5. (Currently Amended). The system of claim 4, ~~further comprising wherein a the~~ remote repository in communication with the local repository ~~and is~~ adapted for receiving files from the local repository;

the remote repository is further adapted to receive replicated files from the local repository; and

the remote repository includes a protection policy component operative to determine whether new versions of existing files should be compressed and whether older versions of existing files should be maintained.

6. (**Cancelled**). The system of claim 1, wherein the fileserver, based on the protection policy, is adapted to define repositories used for storage of files, frequency of data backup, how many replicas are maintained within each repository, and how modifications to share data are maintained.

7. (**Currently Amended**). A method for protecting data comprising:
storing a version of a file within a set of files on a primary disk storage system;
capturing a snapshot of the set of files at a particular point in time based on a backup frequency defined in a protection policy;
maintaining a list of modified and/or created files since last captured snapshot;
examining the protection policy associated with the set of files to determine where and how to protect files associated with the set of files;
wherein the protection policy defines:

repositories used to protect each share of data;

frequency of data protection;

number of replicas of each file that are maintained in each repository; and,

maintenance of modifications to each share of data;

and,

replicating the version of the file to two or more repositories specified by the protection policy, wherein the repositories include at least one of a local repository and a remote repository, wherein a storage location and a number of replicas of the version of the file can be configured to change over time;

wherein each repository includes multiple repository nodes, at least one of which is configured to store the replica of the file;

wherein based on the criticality of the file, the number of stored replicas of the file can be increased or decreased in at least one repository;

wherein the protection policy is configured to be uniquely defined for each set of files.

8. (Previously Presented). The method of claim 7 wherein the file is configured to have at least one version.

9. (Previously Presented). The method of claim 8 wherein the method further comprises:
applying reverse delta compression to the version of the file when a successive version of the file is stored in the repository.

10. (Previously Presented). The method of claim 9 wherein the step of applying reverse delta compression comprises

creating another version of the file, wherein the another version of the file is a version of the file successive to the version of the file;

replicating the another version of the file into the local repository and the remote repository;

replacing the replicated version of the file in the local repository with a reverse delta compressed version representing a difference between the version of the file and the another version of the file and replicating;

transmitting the reverse delta compressed version to the remote repository; and

in the remote repository, replacing the version of the file with the reverse delta compressed version to store the another version and the reverse delta compressed version.

11. (Previously Presented). The method of claim 7 wherein examining a protection policy associated with the set of files to determine where and how to protect files associated with the set of files comprises:

determining the location of repositories and a number of replicas of the files to be stored in each repository.

12. (Previously Presented). The method of claim 7 wherein examining a protection policy associated with the set of files to determine where and how to protect files associated with the set of files comprises:

determining whether to purge a file from a repository after the file has been deleted from a set of files.

13. (Previously Presented). The method of claim 7 wherein examining a protection policy associated with the set of files to determine where and how to protect files associated with the set of files comprises:

determining whether to keep a version history of a file in the set of files.

14. (Previously Presented). The method of claim 7 wherein examining a protection policy associated with the set of files to determine where and how to protect files associated with the set of files comprises:

determining a specified backup frequency for a repository.

15. (Previously Presented). The method of claim 7 wherein examining a protection policy associated with the set of files to determine where and how to protect files associated with the set of files comprises:

determining a specified type of compression for a file in the set of files.

16. (Previously Presented). The method of claim 7 wherein examining a protection policy associated with the set of files to determine where and how to protect files associated with the set of files comprises:

determining a specified caching level of a repository.

17. (**Currently Amended**). A data protection system comprising:

a fileserver configured to contain shares of data and to be connected in communication with at least one local repository that is in communication with at least one remote repository, wherein two or more repositories are configured to store a replica of a file, wherein each repository includes multiple repository nodes, at least one of which is configured to store the replica of the file, wherein a storage location and a number of replicas in each repository can be configured to change over time;

wherein based on a criticality of the file, the number of stored replicas of the file can be increased or decreased in at least one repository;

wherein a share of data is created on the fileserver as a directory or folder of storage capacity;

said fileserver includes:

filter driver means for intercepting input or output activity initiated by client file requests, including modification of any existing stored files and/or creation of new files as they occur, and for capturing a snapshot of a set of the shares of data at a particular point in time and for maintaining a list of modified and/or created files since a last snapshot occurred;

file system means in communication with the filter driver, the file system means for storing client files;

the fileserver is configured to store a unique protection policy for each share of data on the fileserver, the protection policy defines:

repositories used to protect each share of data;

frequency of data protection;

number of replicas of each file that are maintained in each repository; and,

maintenance of modifications to each share of data;

wherein based on the definitions in the protection policy, said filter driver means is configured to capture the snapshot at a specified time interval based on a backup frequency defined in a protection policy stored in the fileserver, wherein the protection policy is configured to be uniquely defined for each share of data on the fileserver.

18. (Cancelled).

19. (Previously Submitted). The system of claim 1, wherein said fileserver is configured to

backup said modified files into repositories identified in said protection policy based on said backup frequency; and

store a latest version of a file in a repository where a prior version of said file is stored;

determine a difference between said latest version of said file and said prior version of said file;

apply reverse delta compression to said difference;
replace said prior version of said file with said reverse delta compressed difference between said latest version and said prior version of said file.

20. (Previously Submitted). The system of claim 1, wherein, based in the protection policy, the files server is configured to determine the location of repositories and a number of replicas of the files to be stored in each repository.

21. (Previously Submitted). The system of claim 1, wherein, based on the protection policy, the files server is further configured to determine whether to purge a file from a repository after the file has been deleted from a set of files.

22. (Previously Submitted). The system of claim 1, wherein, based on the protection policy, the files server is further configured to determine whether to keep a version history of a file in the set of files.

23. (Previously Submitted). The system of claim 1, wherein, based on the protection policy, the files server is further configured to determine a specified backup frequency for a repository.

24. (Previously Submitted). The system of claim 1, wherein, based on the protection policy, the files server is further configured to determine a specified type of compression for a file in the set of files.

25. (Previously Submitted). The system of claim 1, wherein, based on the protection policy, the files server is further configured to determine a specified caching level of a repository.

26. (Previously Submitted). The system of claim 17, wherein the files server further includes

backup means for backing up the modified files into repositories identified in the protection policy based on the backup frequency;

storage means for storing a latest version of a file in a repository where a prior version of the file is stored;

means for determining a difference between the latest version of the file and the prior version of the file;

means for applying reverse delta compression of the difference; and

means for replacing the prior version of the file with the reverse delta compressed difference between the latest version and the prior version of the file.